AMENDMENTS TO THE CLAIMS

1. (Previously Presented) A pressure sensor device, comprising:

an elongate catheter having

a first lumen adapted to accommodate fluid flow therethrough; and

a second, separate, fluid-filled, fluid-impermeable, sealed lumen filled with an incompressible fluid and extending between a flexible membrane that is disposed across an opening formed in the catheter and that is adapted to be exposed to an external pressure source, and a pressure sensor that is effective to measure pressure of the external pressure source in response to displacement of the flexible membrane.

2. (Original) The device of claim 1, wherein the elongate catheter includes a sidewall extending between proximal and distal ends, and the first lumen extends through the elongate catheter and includes at least one fluid-entry port formed through the sidewall at or adjacent to a distal end of the catheter.

3. (Previously Presented) The device of claim 1, wherein the flexible membrane is disposed at a distal end of the second lumen, and the pressure sensor is coupled to a proximal end of the second lumen.

4. (Previously Presented) The device of claim 1, wherein the flexible membrane includes a first surface in contact with fluid within the second lumen, and a second, opposed surface adapted to be exposed to an external pressure source.

5. (Canceled)

6. (Currently Amended) The device of claim 1, wherein the flexible membrane is formed in the sidewall of the catheter.

7. (Original) The device of claim 5, wherein the flexible membrane has a compliance that is in the range of about 0.05 μL/mmHg to 2 μL/mmHg.

8. (Original) The device of claim 5, wherein the flexible membrane is formed from a material selected from the group consisting of polyurethane, silicone, and solvent-based polymer solutions.

9. (Original) The device of claim 1, wherein the second lumen contains a predetermined volume of fluid.

10. (Original) The device of claim 9, wherein the second lumen is free of voids.

11. (Original) The device of claim 9, wherein the volume of fluid in the second lumen is in the range of about 1 μL to 10 μL.

12. (Original) The device of claim 1, wherein the fluid in the second lumen is a low viscosity silicone fluid.

13. (Original) The device of claim 1, wherein the fluid in the second lumen is a biocompatible fluid.

14. (Original) The device of claim 1, wherein the fluid in the second lumen has an average kinematic viscosity in the range of about 5 cs to 20 cs.

15. (Original) The device of claim 1, wherein the second lumen has a diameter that is less than a diameter of the first lumen.

16. (Original) The device of claim 1, wherein the second lumen has a diameter that is in the range of about 0.1 mm to 0.3 mm, and the second lumen has a length that is in the range of about 8 cm to 20 cm.

17. (Previously Presented) The device of claim 1, wherein the catheter has a compliance that is less than a compliance of the flexible membrane.

18. (Original) The device of claim 1, wherein the catheter has a low compliance such that it is not susceptible to deformation as a result of exposure to the external pressure source.

19. (Original) The device of claim 1, wherein the pressure sensor has a frequency response that is greater than 20 Hz.

20. (Original) The device of claim 1, wherein the pressure sensor has a compliance that is in the range of about 0.1 μL/mmHg to 0.02 μL/mmHg.

21. (Previously Presented) The device of claim 1, wherein the flexible membrane comprises a flexible sleeve that is formed around a distal end of the catheter and that is in fluid communication with the second lumen.

22. (Previously Presented) An intra-ventricular catheter, comprising:

an elongate member having a first lumen adapted to accommodate fluid flow therethrough, and a second, fluid-sealed lumen containing an incompressible fluid, the second lumen having a pressure sensor coupled to a flexible membrane disposed across an opening formed in the catheter at a distal end of the catheter and that is adapted to respond to intra-ventricular pressure changes when the catheter is implanted within a patient's ventricle such that direct pressure readings of the intra-ventricular pressure can be measured.

23. (Original) The intra-ventricular catheter of claim 22, wherein the pressure sensor is coupled to a proximal end of the second, fluid-sealed lumen.

24. (Original) The intra-ventricular catheter of claim 23, wherein the flexible membrane is formed across a discontinuity formed in a sidewall of the catheter.

25. (Original) The intra-ventricular catheter of claim 22, wherein the flexible membrane has a compliance that is in the range of about 0.05 μL/mmHg to 2 μL/mmHg.

26. (Previously Presented) The intra-ventricular catheter of claim 22, wherein the fluid in the second lumen has a low viscosity.

27. (Original) The intra-ventricular catheter of claim 22, wherein the pressure sensor has a frequency response that is greater than 20 Hz.

28. (Previously Presented) The intra-ventricular catheter of claim 22, wherein the flexible membrane comprises a flexible sleeve that is formed around a distal end of the catheter and that is in fluid communication with the second lumen.

29. (Previously Presented) A method for measuring intra-ventricular pressure, comprising:

providing a ventricular catheter having

a first lumen adapted to accommodate fluid flow therethrough, and

a second, fluid-sealed, fluid-impermeable lumen containing an incompressible fluid and extending between a distal, flexible membrane that is disposed across an opening formed in the catheter and that is adapted to respond to pressure changes in a patient's ventricle, and a proximal pressure sensor adapted to measure the pressure changes;

implanting the ventricular catheter in a patient's ventricle such that the flexible membrane is disposed within the ventricle and the pressure sensor is disposed at a location outside of the ventricle; and

obtaining at least one reading of the pressure within the patient's ventricle.

30. (Previously Presented) The method of claim 29, wherein the flexible membrane is formed across a discontinuity formed in a sidewall of the catheter.

31. (Original) The method of claim 30, wherein the flexible membrane has a compliance that is in the range of about 0.05 μL/mmHg to 2 μL/mmHg.

32. (Previously Presented) The method of claim 29, wherein the fluid in the second lumen has a low viscosity.

33. (Original) The method of claim 29, wherein the pressure sensor has a frequency response that is greater than about 20 Hz.

34-35. (Cancelled).